JOURNAL OF LIPID RESEARCH

VOLUME 14 · 1973

PUBLISHED BY

LIPID RESEARCH, INC.

RICHARD J. HAVEL, *Editor*

LEWIS I. GIDEZ, *Executive Editor*

ASSOCIATE EDITORS

RAYMOND B. CLAYTON
CHRISTOPHER J. FIELDING
RUDOLPH J. GOERKE
ROBERT K. OCKNER
STEPHEN B. SHOHET
DAVID ZAKIM

EDITORIAL BOARD

MONES BERMAN
G. F. CAHILL, JR.
PETER ELSBACH
HOWARD GOLDFINE
EUGENE L. GOTTFRIED
SCOTT M. GRUNDY
JOHN M. JOHNSTON
ROBERT LEDEEN
ROBERT I. LEVY
PHILIP W. MAJERUS
H. K. MANGOLD
EDWARD J. MASORO
FRED H. MATTSON
J. DENIS MCGARRY
ERWIN H. MOSBACH
H. A. I. NEWMAN
MAURICE M. RAPPORT
RICHARD O. RECKNAGEL
PAUL S. ROHEIM
DONALD M. SMALL
FRED SNYDER
NORTON SPRITZ
PIERRE STOFFYN

ADVISORY BOARD
E. H. AHRENS, JR., *President*

H. E. CARTER
DAVID G. CORNWELL
HOWARD A. EDER
HAROLD J. FALLON
DONALD S. FREDRICKSON
RICHARD J. HAVEL
BENITO LOMBARDI
FRED H. MATTSON
SIDNEY RAFFEL
MAURICE M. RAPPORT

The JOURNAL OF LIPID RESEARCH is published bimonthly for the purpose of promoting basic research in the lipid field. The JOURNAL publishes original articles and invited reviews dealing with the chemistry, biochemistry, and metabolism of lipids, including morphological and clinical studies.

MANUSCRIPTS should be addressed to The Editorial Office, JOURNAL OF LIPID RESEARCH, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, New York 10461.

SUBSCRIPTIONS: In all countries, $35 per year. A special rate of $16 per year is offered to all subscribers paying for their subscriptions *personally*. There is no charge for domestic or foreign postage. Subscribers may find it convenient to place a standing order; annual billing will then be automatic. Foreign subscriptions are payable in U.S. currency, either by check drawn on a U.S. bank or by International Money Order. In many countries payment may be made through an accredited agency (addresses supplied on request). Send all payments to Circulation Department, Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, Maryland 20014. Single and back issues, when available, $6 each. Six weeks' notice is required for a change of address; the notice should give both old and new addresses, including Zip Codes. All correspondence concerning subscriptions should be addressed to: Circulation Department, Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, Maryland 20014. Please make remittances payable to the JOURNAL OF LIPID RESEARCH.

Published bimonthly in January, March, May, July, September, and November by LIPID RESEARCH, INC. Subscription rate: $35 per year; $6 a single copy. Second class postage is paid at Washington, D.C. and at additional mailing offices. Copyright © 1973, by LIPID RESEARCH INC. Printed in the United States of America.

434. Turbidimetric procedure for determination of lipase activity. Burlina, A., and L. Galzigna. 1973. *Clin. Chem.* **19:** 384.

435. Properties of agarose-bound soya-bean lipoxygenase. Grossman, S., M. Trop, P. Budowski, M. Perl, and A. Pinsky. 1972. *Biochem. J.* **127:** 909.

436. Partial purification and properties of cat plasma prostaglandin A isomerase. Jones, R. L., S. Cammock, and E. W. Horton. 1972. *Biochim. Biophys. Acta.* **280:** 588.

437. Dosage semi-automatique de la lipoprotéine-lipase tissulaire chez l'homme et chez l'animal. Sezille, G., J. C. Fruchart, J. Jaillard, Ph. Dewailly, and Ph. Scherpereel. 1973. *Clin. Chim. Acta.* **44:** 399.

438. Activité phospholipasique A du suc duodénal humain. Méthode de détermination par les [^{32}P] phosphatidylcholines. Thouvenot, J. P., S. Durand, and L. Douste-Blazy. 1973. *Clin. Chim. Acta.* **44:** 391.

439. Enzyme reactions in a membrane model. 1: A new technique to study enzyme reactions in monolayers. Verger, R., and G. H. de Haas. 1973. *Chem. Phys. Lipids.* **10:** 127.

440. Quantitative Dünnschichtchromatographie mit Hilfe von Reaktionsgaschromatographie. Franc, J., and J. Šenkýřová. 1973. *J. Chromatogr.* **78:** 123.

441. Method of determining intrinsic specifications from analysis of a purely hydrocarbon mixture. Arytyunov, Y. I., and A. P. Grishin. 1972. *Zavod. Lab.* **38:** 1441.

442. Determination of polyoxyethylene nonionic surfactants by thin-layer chromatography and spot densitometry. Favretto, L., G. P. Marletta, and L. F. Gabrielli. 1972. *Ann. Chim. Rome.* **62:** 478.

443. Preparation and characterization of prostanoyl carnitine. Johnson, M., P. Davison, P. C. Holland, and P. W. Ramwell. 1972. *Lipids.* **7:** 752.

444. Separation of prostaglandins on a hydrophobic Sephadex derivative. Nyström, E., and J. Sjövall. 1973. *Anal. Lett.* **6:** 155.

445. Quantitative vapor-phase analysis of prostaglandin $F_{2\alpha}$ in female human urine. Sweetman, B. J., J. T. Watson, K. Carr, J. A. Oates, and J. C. Frolich. 1973. *Prostaglandins.* **3:** 385.

446. Analysis of prostaglandins in rat vesicular glands. Tan, W. C., and O. S. Privett. 1972. *Lipids.* **7:** 622.

AUTHOR INDEX

VOLUME 14 NUMBERS 1-6

A

Abrams, M. See *Frosolono et al.* 110
Alfin-Slater, R. B. See *Brindis et al.* 688
Allen, C. E. See *Hood and Allen* 605
Allen, Donald O. See *Miller and Allen* 331
Ambron, Richard T. See *Pieringer and Ambron* 370
Anderson, D. B., and **R. G. Kauffman.** Cellular and enzymatic changes in porcine adipose tissue during growth 160
Angel, A. See *Desai et al.* 647
———. See *Farkas et al.* 344
Antunes-Rodrigues, J. See *Teixeira et al.* 672
Aringer, Leif, and **Peter Eneroth.** Studies on the formation of C_7-oxygenated cholesterol and β-sitosterol metabolites in cell-free preparations of rat liver 563
Arreaza, Carlos. See *Camejo et al.* 61
Avigan, M. I. See *Farkas et al.* 344
Ayala, Sixta, Graciela Gaspar, Rodolfo R. Brenner, Raúl O. Peluffo, and **Wolf Kunau.** Fate of linoleic, arachidonic, and docosa-7,10,13,16-tetraenoic acids in rat testicles 296

B

Baker, N., and **R. J. Huebotter.** Lipogenic activation after nibbling and gorging in mice 87
———, and ———. Specific role of glucose in rapid lipogenic activation in vivo 95
Balint, John A. See *Bennett Clark et al.* 581
Baumann, W. J. See *Schupp and Baumann* 121
Bennett Clark, Susanne, Thomas E. Ekkers, Akbal Singh, John A. Balint, Peter R. Holt, and **John B. Rodgers, Jr.** Fat adsorption in essential fatty acid deficiency: a model experimental approach to studies of the mechanism of fat malabsorption of unknown etiology 581
Beller, G. A. See *Therriault et al.* 54
Berger, A. See *Shiloah et al.* 267
Bhatia, I. S. See *Raheja et al.* 695
Biale, Jacob B. See *Schwertner and Biale* 235
Biemann, Klaus. See *Kishimoto et al.* 69
Bjornson, Loring K. See *Kayden et al.* 533
Boardman, N. K. See *Panter and Boardman* 664
Bosch, Virgilio. See *Camejo et al.* 61
Boyer, J. See *Giudicelli and Boyer* 592
Brenner, Rodolfo R. See *Ayala et al.* 296
Brindis, R. G., B. J. Petersen, J. H. Thompson, and **R. B. Alfin-Slater.** Lack of effect of chronic nicotine administration on fatty acid distribution in the liver, testis, and adipose tissue of male Fischer-344 rats 688
Burke, Lester I., Gajanan S. Patil, R. V. Panganamala, Jack C. Geer, and **David G. Cornwell.** Surface areas of naturally occurring lipid classes and the quantitative microdetermination of lipids 9

C

Call, Frank L., II, and **Mary Rubert.** Diglyceride kinase in human platelets 466
Camejo, Germán, Virgilio Bosch, Carlos Arreaza, and **Halina C. Mendez.** Early changes in plasma lipoprotein structure and biosynthesis in cholesterol-fed rabbits 61
Charms, B. L. See *Frosolono et al.* 110
Chelack, W. S., and **A. Petkau.** Distribution of alamethicin in lipid membranes and water 255
Chow, Ching-Kuang. See *Kayden et al.* 533
Corbusier, C. See *Frosolono et al.* 110
Cornwell, David G. See *Burke et al.* 9
———. See *Patil et al.* 26
Cushman, Samuel W., Jerrold J. Heindel, and **Bernard Jeanrenaud.** Cell-associated nonesterified fatty acid levels and their alteration during lipolysis in the isolated mouse adipose cell 632

D

David, J. S. K. See *Polheim et al.* 415
Dell, Ralph B. See *Goodman et al.* 178
Dennis, Edward A. Kinetic dependence of phospholipase A_2 activity on the detergent Triton X-100 152
———. See *Warner and Dennis* 595
Deroo, P. W. See *Kates and Deroo* 438
Desai, K., K. C. Li, and **A. Angel.** Bimodal effect of insulin on hormone-stimulated lipolysis: relation to intracellular 3′,5′-cyclic adenylic acid and free fatty acid levels 647
de Vries, A. See *Shiloah et al.* 267
Dietschy, John M. See *Sallee and Dietschy* 475
DiTullio, Nicholas W., and **Elwood J. Stack.** Alterations in biliary lipids of mice during dehydrocholic acid feeding 552
Doisy, E. A., Jr. See *Noll et al.* 229, 385, 391
Dorrity, Floyd O., Jr. See *Lack et al.* 367
Duncombe, W. G., and **T. J. Rising.** Quantitative extraction and determination of nonesterified fatty acids in plasma 258

E

Eaton, R. Philip. Hypolipemic action of glucagon in experimental endogenous lipemia in the rat 312
Edelstein, Diane. See *Lasser et al.* 1
Eder, Howard A. See *Lasser et al.* 1
Eisenberg, Shlomo, Herbert G. Windmueller, and **Robert I. Levy.** Metabolic fate of rat and human lipoprotein apoproteins in the rat 446
Ekkers, Thomas E. See *Bennett Clark et al.* 581
Elliott, William H. See *Noll et al.* 229, 385, 391
Eneroth, Peter. See *Aringer and Eneroth* 563
Erickson, John S., and **Norman S. Radin.** *N*-Hexyl-*O*-glucosyl sphingosine, an inhibitor of glucosyl ceramide β-glucosidase 133
Evans, James E. See *McCluer and Evans* 611

F

Fallon, H. J. See *Jamdar and Fallon* 509, 517
———. See *Lamb et al.* 459

Farkas, J., A. Angel, and **M. I. Avigan.** Studies on the compartmentation of lipid in adipose cells. II. Cholesterol accumulation and distribution in adipose tissue components 344
Feinman, L. See *Joly et al.* 337
Ferretti, Aldo. See *Flanagan and Ferretti* 306
Fidge, Noel H. See *Reardon et al.* 319
Flanagan, Vincent P., and **Aldo Ferretti.** Hydrocarbons and polychlorinated biphenyls from the unsaponifiable fraction of anhydrous milk fat 306
Flowers, Carolyn M. See *Wilson et al.* 124
Fredrickson, Donald S. See *Krauss et al.* 286
Frosolono, M. F., R. Pawlowski, B. L. Charms, C. Corbusier, M. Abrams, and **J. Jones, III.** Lung surface-active fraction as a model system for macromolecular ultrastructural studies with *Crotalus atrox* venom 110

G

Gaspar, Graciela. See *Ayala et al.* 296
Geer, Jack C. See *Burke et al.* 9
Gibbons, G. F., K. A. Mitropoulos, and **Kalpana Ramananda.** A method for the rapid qualitative and quantitative analysis of 4,4-dimethyl sterols 589
Gidez, Lewis I. Effect of dietary fat on pancreatic lipase levels in the rat 169
Giudicelli, H., and **J. Boyer.** Effects of glycerol on human adipose tissue triglyceride lipase activity 592
Godinez, Rodolfo I., and **William J. Longmore.** Use of the isolated perfused rat lung in studies on lung lipid metabolism 138
———. See *Longmore et al.* 145
Goldrick, R. Brian. See *Reardon et al.* 319
Goodman, DeWitt S., Robert P. Noble, and **Ralph B. Dell.** Three-pool model of the long-term turnover of plasma cholesterol in man 178
———. See *Muto et al.* 525
Gordon, Stuart G., Kathleen Smith, Joseph L. Rabinowitz, and **P. Roy Vagelos.** Studies of *trans*-3-methyl-2-hexenoic acid in normal and schizophrenic humans 495
Gorman, Robert R., Helen M. Tepperman, and **Jay Tepperman.** Epinephrine binding and the selective restoration of adenylate cyclase activity in fat-fed rats 279
Gornall, D. A., and **A. Kuksis.** Alterations in lipid composition of plasma lipoproteins during deposition of egg yolk 197

H

Hancock, A. J., and **M. Kates.** Structure determination of the phosphatidylglycerosulfate (diether analog) from *Halobacterium cutirubrum* 422
———, and ———. Synthesis of sulfate esters of phosphatidylglycerol (diphytanyl ether analog) 430
Hanson, Russell F., Peter D. Klein, and **Gale C. Williams.** Bile acid formation in man: metabolism of 7α-hydroxy-4-cholesten-3-one in bile fistula patients 50
Hartley, L. H. See *Therriault et al.* 54
Hauser, S. See *Shefer et al.* 400, 573
Heindel, Jerrold J. See *Cushman et al.* 632
Herbert, Peter N. See *Windmueller et al.* 215
Hignite, Charles. See *Hoshi et al.* 406
———. See *Kishimoto et al.* 69
Hill, Patsy M. See *Lamb et al.* 459
Holt, Peter R. See *Bennett Clark et al.* 581
Homcy, Charles J., and **Simeon Margolis.** Fatty acid oxidation and esterification in isolated rat hepatocytes: regulation by dibutyryl adenosine 3′,5′-cyclic monophosphate 678
Hood, R. L., and **C. E. Allen.** Cellularity of bovine adipose tissue 605
Horrocks, Lloyd A. See *Sun and Horrocks* 206
Hoshi, Motonori, Yasuo Kishimoto, and **Charles Hignite.** 2,3-*erythro*-Dihydroxyhexacosanoic acid and homologs: isolation from yeast cerebrin phosphate and determination of their structures 406
———, **Marcia Williams,** and **Yasuo Kishimoto.** Esterification of fatty acids at room temperature by chloroform–methanolic HCl–cupric acetate 599
Huebotter, R. J. See *Baker and Huebotter* 87, 95
Hulcher, Frank H., and **Wayne H. Oleson.** Simplified spectrophotometric assay for microsomal 3-hydroxy-3-methylglutaryl CoA reductase by measurement of coenzyme A 625

I

Ishii, H. See *Joly et al.* 337
Itatsu, T. See *Tani et al.* 32

J

Jamdar, S. C., and **H. J. Fallon.** Glycerolipid biosynthesis in rat adipose tissue. I. Properties and distribution of glycerophosphate acyltransferase and effect of divalent cations on neutral lipid formation 509
———, and ———. Glycerolipid synthesis in rat adipose tissue. II. Properties and distribution of phosphatidate phosphatase 517
Jamieson, Graham A. See *Tao et al.* 16
Javitt, Norman B. See *Kaplowitz and Javitt* 224
Jeanrenaud, Bernard. See *Cushman et al.* 632
Johnston, John M. See *Polheim et al.* 415
Joly, J.-G., L. Feinman, H. Ishii, and **C. S. Lieber.** Effect of chronic ethanol feeding on hepatic microsomal glycerophosphate acyltransferase activity 337
Jones, J., III. See *Frosolono et al.* 110

K

Kaplan, Arnold. See *Kariya and Kaplan* 243
Kaplowitz, Neil, and **Norman B. Javitt.** Quantitative analysis of unconjugated and conjugated bile acids in duodenal fluid by densitometry after paper electrophoresis 224
Kariya, Masao, and **Arnold Kaplan.** Effects of acidic phospholipids, nucleotides, and heparin on the activity of lipase from rat liver lysosomes 243
Kates, M., and **P. W. Deroo.** Structure determination of the glycolipid sulfate from the extreme halophile *Halobacterium cutirubrum* 438
———. See *Hancock and Kates* 422, 430
Kauffman, R. G. See *Anderson and Kauffman* 160
Kaur, Charanjit. See *Raheja et al.* 695
Kayden, Herbert J., Ching-Kuang Chow, and **Loring K. Bjornson.** Spectrophotometric method for determination of tocopherol in red blood cells 533
Kishimoto, Yasuo, Marcia Williams, Hugh W. Moser, Charles Hignite, and **Klaus Biemann.** Branched-chain

and odd-numbered fatty acids and aldehydes in the nervous system of a patient with deranged vitamin B_{12} metabolism 69

———. See *Hoshi et al.* 406, 599

Klein, Peter D. See *Hanson et al.* 50

Klibansky, Chaya. See *Shiloah et al.* 267

Krauss, Ronald M., Herbert G. Windmueller, Robert I. Levy, and **Donald S. Fredrickson.** Selective measurement of two different triglyceride lipase activities in rat postheparin plasma 286

Kuksis, A. See *Gornall and Kuksis* 197

Kunau, Wolf. See *Ayala et al.* 296

Kupiecki, Floyd P. Lipolysis and reesterification: effects of some inhibitors of adenosine 3′,5′-cyclic monophosphate phosphodiesterase 250

L

Lack, Leon, Floyd O. Dorrity, Jr., Thomas Walker, and **Gail D. Singletary.** Synthesis of conjugated bile acids by means of a peptide coupling reagent 367

Lamb, Robert G., Patsy M. Hill, and **Harold J. Fallon.** Inhibition of palmitoyl CoA deacylase by chlorophenoxyisobutyrate and betabenzalbutyrate 459

Lapar, V. See *Shefer et al.* 400, 573

Lasser, Norman L., Paul S. Roheim, Diane Edelstein, and **Howard A. Eder.** Serum lipoproteins of normal and cholesterol-fed rats 1

Lee, D. J. See *Taylor et al.* 643

Levy, Robert I. See *Eisenberg et al.* 446

———. See *Krauss et al.* 286

———. See *Windmueller et al.* 215

Li, K. C. See *Desai et al.* 647

Lieber, C. S. See *Joly et al.* 337

Lieberman, Sidney. See *Samuel and Lieberman* 189

Lippel, Kenneth. Activation of branched and other long-chain fatty acids by rat liver microsomes 102

Longmore, William J., Carolyn M. Niethe, Deborah J. Sprinkle, and **Rodolfo I. Godinez.** Effect of CO_2 concentration on phospholipid metabolism in the isolated perfused rat lung 145

———. See *Godinez and Longmore* 138

M

Margolis, Simeon. See *Homcy and Margolis* 678

Martin, Charles M., and **Harold J. Nicholas.** Metabolism of cholesteryl palmitate by rat brain in vitro: formation of cholesterol epoxides and cholestane-3β,5α,6β-triol 618

Matthews, Richard H. See *Patil et al.* 26

McCluer, Robert H., and **James E. Evans.** Preparation and analysis of benzoylated cerebrosides 611

Mendez, Halina C. See *Camejo et al.* 61

Migliorini, R. H. See *Teixeira et al.* 672

Miller, Elizabeth A., and **Donald O. Allen.** Hormone-stimulated lipolysis in isolated fat cells from "young" and "old" rats 331

Mitropoulos, K. A. See *Gibbons et al.* 589

Montgomery, M. W. See *Taylor et al.* 643

Morris, M. D. See *Rudel and Morris* 364

Mosbach, E. H. See *Shefer et al.* 400, 573

Moser, Hugo W. See *Kishimoto et al.* 69

Muto, Yasutoshi, Frank Rees Smith, and **DeWitt S. Goodman.** Comparative studies of retinol transport in plasma 525

N

Ness, Gene C. See *Slakey et al.* 485

Nicholas, Harold J. See *Martin and Nicholas* 618

Niethe, Carolyn M. See *Longmore et al.* 145

Noble, Robert P. Nonstainable polyester film, Cronar, for electrophoresis of plasma lipoproteins 255

———. See *Goodman et al.* 178

Noll, Burton W., E. A. Doisy, Jr., and **William H. Elliott.** Bile acids. XXXVIII. Conversion of 5α-cholestane-3β,7α-diol to allo bile acids by the rat 385

———, ———, and ———. Bile acids. XXXIX. Metabolism of 5α-cholestane-3β,26-diol and 5α-cholestane-3β,7α,26-triol in the rat with a bile fistula 391

———, **Stephen A. Ziller, Jr., E. A. Doisy, Jr.,** and **William H. Elliott.** Bile acids. XXXVII. Identification of the 3β isomers of allocholic and allochenodeoxycholic acids as metabolites of 5α-cholestanol in the rat 229

O

Ogata, K. See *Tani et al.* 32

Ohashi, Masako, and **Tamio Yamakawa.** Gas–liquid chromatography of oligosaccharides released from red cell glycosphingolipids by ozonolysis 698

Oleson, Wayne H. See *Hulcher and Oleson* 625

Ontko, Joseph A. Effects of ethanol on the metabolism of free fatty acids in isolated liver cells 78

P

Panganamala, R. V. *See Burke et al.* 9

Panter, R. A., and **N. K. Boardman.** Lipid biosynthesis by isolated plastids from greening pea, *Pisum sativum* 664

Patil, Gajanan S., Richard H. Matthews, and **David G. Cornwell.** Kinetics of the processes of desorption from fatty acid monolayers 26

———. See *Burke et al.* 9

Pawlowski, R. See *Frosolono et al.* 110

Peluffo, Raúl O. See *Ayala et al.* 296

Petersen, B. J. See *Brindis et al.* 688

Petkau, A. See *Chelack and Petkau* 255

Pieringer, Ronald A., and **Richard T. Ambron.** A method for the specific labeling of the glycerol in glyceride-containing lipids of *Streptococcus faecalis* ATCC 9790 370

Polheim, Diether, J. S. K. David, F. Michael Schultz, Mary Bob Wylie, and **John M. Johnston.** Regulation of triglyceride biosynthesis in adipose and intestinal tissue 415

Porter, John W. See *Slakey et al.* 485

Q

Qureshi, Nilofer. See *Slakey et al.* 485

R

Rabinowitz, Joseph L. See *Gordon et al.* 495

Radin, Norman S. See *Erickson and Radin* 133

Raheja, R. K., Charanjit Kaur, Ajit Singh, and **I. S. Bhatia.** New colorimetric method for the quantitative estimation of phospholipids without acid digestion 695

Ramananda, Kalpana. See *Gibbons et al.* 589

Reading, James C. See *Wilson et al.* 124

Reardon, Michael F., R. Brian Goldrick, and **Noel H. Fidge.** Dependence of rates of lipolysis, esterification, and free fatty acid release in isolated fat cells on age, cell size, and nutritional state 319
Rising, T. J. See *Duncombe and Rising* 258
Rodgers, John B., Jr. See *Bennett Clark et al.* 581
Roheim, Paul S. See *Lasser et al.* 1
Rosenberg, H. See *Viswanathan and Rosenberg* 327
Rosenfeld, Bruno. Regulation by dietary choline of hepatic fatty acid synthetase in the rat 557
Rubenstein, Bernard, and **David Rubinstein.** Comparison of the metabolic behavior in vitro of the apoproteins of rat serum high density lipoprotein$_2$ and high density lipoprotein$_3$ 357
Rubert, Mary. See *Call and Rubert* 466
Rubinstein, David. See *Rubenstein and Rubinstein* 357
Rudel, L. L., and **M. D. Morris.** Determination of cholesterol using *o*-phthalaldehyde 364

S

Sallee, Verney L., and **John M. Dietschy.** Determinants of intestinal mucosal uptake of short- and medium-chain fatty acids and alcohols 475
Samuel, Paul, and **Sidney Lieberman.** Improved estimation of body masses and turnover of cholesterol by computerized input–output analysis 189
Schultz, F. Michael. See *Polheim et al.* 415
Schupp, E., and **W. J. Baumann.** Identification and quantitation of lipid-bound short-chain diols 121
Schwertner, Harvey A., and **Jacob B. Biale.** Lipid composition of plant mitochondria and of chloroplasts 235
Shefer, S., S. Hauser, V. Lapar, and **E. H. Mosbach.** Regulatory effects of dietary sterols and bile acids on rat intestinal HMG CoA reductase 400
———, ———, ———, and ———. Regulatory effects of sterols and bile acids on hepatic 3-hydroxy-3-methylglutaryl CoA reductase and cholesterol 7α-hydroxylase in the rat 573
Shiloah, J., Chaya Klibansky, A. de Vries, and **A. Berger.** Phospholipase B activity of a purified phospholipase A from *Vipera palestinae* venom 267
Singh, Ajit. See *Raheja et al.* 695
Singh, Akbal. See *Bennett Clark et al.* 581
Singh, H. Glycolipids of peripheral nerve: isolation and characterization of glycolipids from rabbit sciatic nerve 41
Singletary, Gail D. See *Lack et al.* 367
Slakey, Linda L., Gene C. Ness, Nilofer Qureshi, and **John W. Porter.** Occurrence of the enzymes effecting the conversion of acetyl CoA to squalene in homogenates of hog aorta 485
Smith, Frank Rees. See *Muto et al.* 525
Smith, Kathleen. See *Gordon et al.* 495
Smith, Marion Edmonds. A regional survey of myelin development: some compositional and metabolic aspects 541
Smoake, J. A. See *Therriault et al.* 54
Sprinkle, Deborah J. See *Longmore et al.* 145
Stack, Elwood J. See *DiTullio and Stack* 552
Subbiah, M. T. Ravi. Hyocholic acid as internal standard for quantitation of human fecal bile acids 692
Sun, Grace Y. Phospholipids and acyl groups in subcellular fractions from human cerebral cortex 656
———, and **Lloyd A. Horrocks.** Metabolism of palmitic acid in the subcellular fractions of mouse brain 206
Sweeley, Charles C. See *Tao et al.* 16

T

Tani, H., K. Ogata, and **T. Itatsu.** Effect of ethionine on carbohydrate and lipid metabolism 32
Tao, Robert V. P., Charles C. Sweeley, and **Graham A. Jamieson.** Sphingolipid composition of human platelets 16
Taylor, S. L., M. W. Montgomery, and **D. J. Lee.** Liver dehydrogenase levels in rainbow trout, *Salmo gairdneri,* fed cyclopropenoid fatty acids and aflatoxin B$_1$ 643
Teixeira, V. L., J. Antunes-Rodrigues, and **R. H. Migliorini.** Evidence for centers in the central nervous system that regulate selectively fat mobilization in the rat 672
Tepperman, Helen M. See *Gorman et al.* 279
Tepperman, Jay. See *Gorman et al.* 279
Therriault, D. G., G. A. Beller, J. A. Smoake, and **L. H. Hartley.** Intramuscular energy sources in dogs during physical work 54
Thompson, J. H. See *Brindis et al.* 688

V

Vagelos, P. Roy. See *Gordon et al.* 495
Viswanathan, C. V., and **H. Rosenberg.** Isolation of ceramide-monomethylaminoethylphosphonate from the lipids of *Tetrahymena pyriformis W* 327

W

Walker, Thomas. See *Lack et al.* 367
Warner, Thomas G., and **Edward A. Dennis.** New sensitive assay for phosphatidylserine decarboxylase based on the detection of CO_2 from nonradiolabeled phosphatidylserine 595
Williams, Gale C. See *Hanson et al.* 50
Williams, Marcia. See *Hoshi et al.* 599
———. See *Kishimoto et al.* 69
Wilson, Dana E., Carolyn M. Flowers, and **James C. Reading.** Validation of a "clearing" assay for milk lipoprotein lipase in agarose gel 124
Windmueller, Herbert G., Peter N. Herbert, and **Robert I. Levy.** Biosynthesis of lymph and plasma lipoprotein apoproteins by isolated perfused rat liver and intestine 215
———. See *Eisenberg et al.* 446
———. See *Krauss et al.* 286
Wylie, Mary Bob. See *Polheim et al.* 415

Y

Yamakawa, Tamio. See *Ohashi and Yamakawa* 698

Z

Ziboh, Vincent A. Biosynthesis of prostaglandin E$_2$ in human skin: subcellular localization and inhibition by unsaturated fatty acids and anti-inflammatory drugs 377
Ziller, Stephen A., Jr. See *Noll et al.* 229

SUBJECT INDEX

VOLUME 14 NUMBERS 1–6

A

Acetyl CoA: Conversion to squalene by enzymes of hog aorta 485
Adenylate cyclase: Activity and epinephrine binding in adipocyte ghosts from fat-fed rats 279
Adipocytes
Bovine, cell diameter and volume 605
Ghosts, from fat-fed rats; epinephrine binding and adenylate cyclase activity 279
Mouse, cell-associated nonesterified fatty acids 632
Rat, bimodal effect of insulin on hormone-stimulated lipolysis 647
Rat, composition of lipids in relation to age 344
Rat, effect of age, cell size, and nutritional state on rates of lipolysis, esterification, and free fatty acid release 319
Rat, lipolysis 331
Adipose tissue
Bovine, cellularity 605
Distribution of cholesterol 344
Human, effect of glycerol on triglyceride lipase activity 592
Plasma membranes, lipids in 344
Porcine, changes in cellularity and activity of enzymes during growth 160
Rat, composition of lipid in relation to age 344
Rat, effect of theophylline and inhibitors of adenosine 3′,5′-cyclic monophosphate phosphodiesterase on lipolysis and reesterification 250
Rat, glycerolipid biosynthesis 509, 517
Rat, glycerophosphate acyltransferase 509
Rat, phosphatidate phosphatase 517
Regulation of triglyceride biosynthesis (golden hamster) 415
Aflatoxin B_1: In diet of rainbow trout, effect on liver dehydrogenase levels 643
Alamethicin: Distribution in lipid membranes and water 255
Allo bile acids: Formation from 5α-cholestane-3β, 7α-diol by the rat 385
Amylase, pancreatic: Rat, effect of dietary fat on levels of 169
Aorta: Hog, conversion of acetyl CoA to squalene by enzymes of 485
Apoproteins
Of human plasma lipoproteins, metabolism in the rat 446
Of lymph and plasma lipoproteins, biosynthesis by isolated perfused rat intestine 215
Of rat plasma lipoproteins, metabolism 446
Of rat serum very low density lipoprotein, effect of glucagon on synthesis 312
Of rat serum high density lipoproteins 2 and 3, metabolism in vitro 357
Arachidonic acid: Metabolism in rat testicles 296
Avocado: Chloroplasts and mitochondria, lipid compositions 235

B

Betabenzalbutyrate: Inhibition of palmitoyl CoA deacylase 459
Bile acids
Conjugated, synthesis by means of a peptide coupling agent 367
Conversion of 5α-cholestane-3β,7α-diol to allo bile acids by the rat 385
Dietary, regulatory effect on hepatic cholesterol 7α-hydroxylase and 3-hydroxy-3-methylglutaryl CoA reductase in the rat 573
Formation in man 50
Human fecal, quantitative determination 692
Metabolism of 5α-cholestane-3β,7α,26-triol and 5α-cholestane-3β,26-diol in the rat 391
Metabolism of 5α-cholestanol in the rat 229
Quantitative analysis in duodenal fluid by densitometry after paper electrophoresis 224
Biliary lipids: In mice, effect of dietary dehydrocholic acid 552
Biosynthesis: Of lipids by isolated plastids from greening pea (*Pisum sativum*) 664
Brain
Human, phospholipids and acyl groups in subcellular fractions of cerebral cortex 656
Mouse, metabolism of palmitic acid in subcellular fractions 206
Rat, metabolism of cholesteryl palmitate in vitro 618

C

Carbohydrate metabolism: In rats, effect of ethionine treatment 32
Cardiolipin: Effect on activity of rat liver lysosomal lipase 243
Cauliflower: Chloroplasts and mitochondria, lipid compositions 235
Cell-free preparations: Of rat liver, 7α-hydroxylation of cholesterol and sitosterol 563
Central nervous system: Centers of regulation of fat mobilization in the rat 672
Ceramide-monomethylaminoethyl phosphonate: Isolation from lipids of *Tetrahymena pyriformis W* 327
Cerebrin phosphate: Yeast, structure of very polar fatty acids 406
Cerebrosides: Benzoylated, preparation and analysis 611
Chlorophenoxyisobutyrate: Inhibition of palmitoyl CoA deacylase 459
Chloroplasts
Developing, lipid biosynthesis in the pea (*Pisum sativum*) 664
Lipid composition 235
5α-Cholestane-3β,7α-diol: Conversion to allo bile acids by the rat 385
5α-Cholestane-3β,26-diol: Metabolism in the rat with a bile fistula 391
Cholestane-3β,5α,6β-triol: Formation in rat brain in vitro from cholesteryl palmitate 618
5α-Cholestane-3β,7α,26-triol: Metabolism in the rat with a bile fistula 391

5α-Cholestan-3β-ol: Metabolism in the rat 229
Cholesterol
Accumulation and distribution in adipose tissue components 344
Body mass of, estimation by computerized input–output analysis 189
Determination using *o*-phthalaldehyde 364
7α-Hydroxylation in cell-free preparations of rat liver 563
Plasma, three-pool model of long-term turnover in man 178
Turnover in man, estimation by computerized input–output analysis 189
Cholesterol epoxides: Formation in rat brain in vitro from cholesteryl palmitate 618
Cholesterol 7α-hydroxylase: In rat liver, regulation by dietary sterols and bile acids 573
Cholesteryl palmitate: Metabolism in vitro by rat brain 618
Choline: Dietary, regulation of hepatic fatty acid synthetase in the rat 557
Chromatography, column: Of steroids, on hydroxyalkylated Sephadex LH-20 563
Chromatography, gas–liquid
Of dimethyl steryl acetates 589
And mass spectrometry of *trans*-3-methyl-2-hexenoic acid 495
Of methyl ester trifluoroacetates of fecal bile acids 692
Of oligosaccharides from red cell glycosphingolipids 698
Of total lipoprotein lipids (hen) 197
Chromatography, high pressure liquid: Of benzoylated cerebrosides 611
Chromatography, thin-layer
Of dimethyl steryl acetates 589
Of glycolipids from rabbit sciatic nerve 41
Of glycosylceramides 16
3′,5′-Cyclic adenylic acid: Intracellular, in rat adipocytes 647
Chylomicrons: Formation in essential fatty acid-deficient rats 581
Coenzyme A: Measurement in assay of HMG CoA reductase 625
***Crotalus atrox* venom:** Use in macromolecular ultrastructural studies of dog lung surface-active fraction 110
Cyclic AMP phosphodiesterase: Inhibitors of, effect on lipolysis and reesterification in rat adipose tissue 250
Cyclopropenoid fatty acids: In diet of rainbow trout, effect on liver dehydrogenase levels 643

D

Dehydrocholic acid: Effect of feeding on biliary lipids in mice 552
Densitometry: Quantitative analysis of bile acids after paper electrophoresis 224
Desaturation: Of polyunsaturated fatty acids by rat testicle microsomes 296
Dibutyryl 3′,5′-cyclic adenylic acid: Regulation of fatty acid esterification and oxidation in isolated rat hepatocytes 678
Dietary bile acids: Regulation of HMG CoA reductase in rat intestine 400
Dietary cholesterol: Effect on changes in structure and biosynthesis of plasma lipoproteins in the rabbit 61
Dietary fat: Effect on pancreatic enzyme levels in the rat 169
Dietary sterols: Regulation of HMG CoA reductase in rat intestine 400
Diglyceride kinase: In human platelets 466
2,3-*erythro*-Dihydroxyhexacosanoic acid: isolation from yeast cerebrin phosphate 406
4,4-Dimethyl sterols: Qualitative and quantitative analysis 589
Diols, short-chain: Lipid-bound, identification and quantitation 121
Docosa-7,10,13,16-tetraenoic acid: Metabolism in rat testicles 296

E

Electrophoresis, paper: Of bile acids in duodenal fluid 224
Electrophoresis, polyacrylamide gel
Of apolipoproteins 446
Of apoproteins of rat serum high density lipoproteins 2 and 3 357
Of phospholipase from *Vipera palestinae* venom 267
Of rat apolipoproteins 214
Elongation: Of polyunsaturated fatty acids by rat testicle microsomes 296
Enzymes
In hog aorta, for conversion of acetyl CoA to squalene 485
Of pig adipose tissue, changes in activity of during growth 160
Epinephrine
Binding to adipocyte ghosts (rats) 279
Effect on lipolysis in adipocytes from young and old rats 331
Effect on metabolic parameters of rat adipocytes 319
Ethanol: Effect on metabolism of free fatty acids in isolated liver cells 78
Ethionine: Effect on hepatic ATP levels and on carbohydrate and lipid metabolism in rats 32
Erythrocytes: Spectrophotometric determination of tocopherol 533
Essential fatty acid deficiency: Fat absorption (rats) 581
Esterification: By rat adipocytes, effect of age, cell size, and nutritional state 319
Ethanol: Effect of chronic feeding on α-glycerophosphate acyltransferase in rat liver microsomes 337
***N*-Ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline:** In synthesis of conjugated bile acids 367
Exercise: Effect on levels of glycogen and triglyceride in dog muscle 54

F

Fat: Mobilization in the rat, regulation by the central nervous system 672
Fat absorption: In essential fatty acid-deficient rats 581
Fatty acid(s)
Activation, rate of, a function of solubility 102
Branched and long-chain, activation by rat liver microsomes 102
Esterification and oxidation in rat hepatocytes, regulation by dibutyryl cyclic AMP 678
Esterification by chloroform–methanolic HCl–cupric acetate at room temperature 599
Nonesterified, levels in the isolated mouse adipose cell 632
Nonesterified, quantitative extraction and determination in plasma 258
Synthesis from glucose in mice 87, 95
Water-soluble, uptake by rat intestinal mucosa 475

Fatty acid composition
Of avocado and cauliflower mitochondria and chloroplasts 235
Of egg yolk and plasma lipoprotein triglycerides (hen) 197
Of glycolipids from rabbit sciatic nerve 41
Of human platelet and erythrocyte glycosphingolipids 16
Of phospholipids from subcellular fractions of human cerebral cortex 656
Of rat tissues, effect of nicotine administration 688
Fatty acid monolayers: Kinetics of contraction 26
Fatty acid synthetase: Hepatic, regulation by dietary choline in the rat 557
Free fatty acid(s)
Effect of ethanol on metabolism in isolated liver cells 78
Intracellular, in rat adipocytes 647
Release by rat adipocytes, effect of age, cell size, and nutritional state 319
As a source of energy during physical work in dogs 54

G

Glucagon
Effect on rat very low density lipoprotein apoprotein 312
Hypolipemic action in eulipemic and hyperlipemic rats 312
Glucocerebroside: Inhibition of hydrolysis by glucocerebrosidase by *N*-hexyl-*O*-glucosyl sphingosine 133
Glucose
Metabolism in nibbling and gorging mice 87
Role in rapid activation of lipogenesis in mice 95
Glucosyl ceramide β-glucosidase: Inhibition by *N*-hexyl-*O*-glucosyl sphingosine 133
Glycerol
Effect on triglyceride lipase activity of human adipose tissue 592
Specific labeling of, in glyceride-containing lipids of *Streptococcus faecalis* ATCC 9790 370
Glycerolipids
Biosynthesis in rat adipose tissue 509, 517
From nervous system of a patient with methylmalonic aciduria 69
Glycerophosphate acyltransferase
Activity in rat liver microsomes, effect of chronic ethanol feeding 337
Properties and distribution in rat adipose tissue 509
Glycolipids: From rabbit sciatic nerve 41
Glycolipid sulfate: From *Halobacterium cutirubrum*, structure determination 438
Glycosphingolipids: Red cell, analysis of oligosaccharides 698
Greening pea *see* ***Pisum sativum***

H

Halobacterium cutirubrum
Structure determination of the glycolipid sulfate 438
Structure determination of phosphatidylglycerosulfate (diether analog) 422
Hepatocytes
Isolated, effect of ethanol on metabolism of free fatty acids 78
Rat, fatty acid oxidation and esterification 678
***N*-Hexyl-*O*-glucosyl sphingosine:** Inhibition of glucosyl ceramide β-glucosidase 133
High density lipoproteins: Rat serum, metabolic behavior in vitro of apoproteins 357
High fat diet: Effect on epinephrine-stimulated adenylate cyclase activity in rat adipocytes 279
HMG CoA reductase *see* **3-Hydroxy-3-methylglutaryl coenzyme A reductase**
Hydrocarbons: In unsaponifiable fraction of anhydrous milk fat 306
3β-Hydroxy allocholanic acids: Metabolites of 5α-cholestanol in the rat 229
7α-Hydroxy-4-cholesten-3-one: Metabolism in bile fistula patients 50
3-Hydroxy-3-methylglutaryl coenzyme A reductase
Microsomal, spectrophotometric assay 625
In rat liver, regulation by dietary sterols and bile acids 573
Regulation in rat intestine by dietary bile acids and sterols 400
Hyocholic acid: As an internal standard for quantitation of human fecal bile acids 692
Hyperlipidemia: Effect of glucagon, in the rat 312
Hypolipidemic agents: Inhibition of palmitoyl CoA deacylase 459

I

Immunoelectrophoresis
Quantitative, of rabbit plasma lipoproteins 61
Quantitative, of rat serum lipoproteins 1
Intestinal mucosa: Rat, uptake of short- and medium-chain fatty acids and water-soluble alcohols 475
Intestine
Rat, HMG CoA reductase 400
Regulation of triglyceride biosynthesis (golden hamster) 415

J

Jejunal brush border: Rat, uptake rates of water-soluble fatty acids and alcohols across 475

L

Linoleic acid: Metabolism in rat testicles 296
Lipase, lysosomal: Rat liver, effect of acid phospholipids, heparin, and nucleotides on activity 243
Lipase, pancreatic: Rat, effect of dietary fat on levels of 169
Lipase, triglyceride *see* **Triglyceride lipase**
Lipid(s)
Biosynthesis by developing chloroplasts of *Pisum sativum* 664
Lung, studies on metabolism 138
Microdetermination by surface area measurements 9
In rat brain and spinal cord myelin 541
Lipid composition
Of plant mitochondria and chloroplasts 235
Of plasma lipoproteins during deposition of egg yolk 197
Lipid membranes: Alamethicin in, under equilibrium dialysis conditions 255
Lipid metabolism: In rats, effect of ethionine-treatment 32
Lipogenesis
Activation in mice, specific role of glucose 95
From glucose after nibbling and gorging in mice 87
Lipolysis
Alterations in cell-associated nonesterified fatty acids during, in isolated mouse adipose cells 632
Hormone-stimulated, effect of insulin on regulation in rat adipocytes 647

Hormone-stimulated, in adipocytes from young and old rats 331
In rat adipocytes, effect of age, cell size, and nutritional state 319
In rat adipose tissue, effect of inhibitors of cyclic AMP phosphodiesterase 250
Lipoperoxidation: In rat brain in vitro 618
Lipoprotein lipase: In cow's milk, assay in agarose gel 124
Lipoproteins, lymph: Biosynthesis of apoproteins by isolated perfused rat intestine 214
Lipoproteins, plasma
Biosynthesis of apoproteins by isolated perfused rat liver and intestine 214
Hen, alteration in lipid composition during deposition of egg yolk 197
Human, apoproteins, metabolic fate in the rat 446
Rabbit, cholesterol-fed, early changes in structure and biosynthesis 61
Rat, apoproteins, metabolic fate in the rat 446
Use of a nonstainable polyester film for electrophoresis 255
Lipoproteins, serum
Density distribution in normal and cholesterol-fed rats 1
Rat, quantitative immunoelectrophoresis 1
Liver cells *see* **Hepatocytes**
Liver dehydrogenases: In rainbow trout, levels of, effect of dietary cyclopropenoid fatty acids and aflatoxin B_1 643
Lung
Lipids, studies on metabolism 138
Phospholipid, effect of CO_2 concentration on metabolism 145
Lysolecithin: Hydrolysis by a purified phospholipase A preparation from *Vipera palestinae* venom 267

M

Mass spectrometry
Of isomers of methylhexadecanoic acid 69
Of methyl 2,3-di-*O*-TMS-hexacosanoate derived from yeast cerebrin phosphate 406
Of *trans*-phytene 306
Of short-chain diols 121
Methylhexadecanoic acid: Isomers in nerve glycerolipids 69
***trans*-3-Methyl-2-hexenoic acid**
Gas–liquid chromatography–mass spectrometry 495
In sweat from normal and schizophrenic humans 495
Methylmalonic aciduria: Methylhexadecanoic acid isomers in glycerolipids of nerves 69
Micelles: Mixed, of phospholipid and Triton X-100 152
Microsomes
Liver (rat), activation of branched and long-chain fatty acids 102
Liver (rat), effect of chronic ethanol feeding on activity of α-glycerophosphate acyltransferase in 337
Liver (rat), metabolism of polyunsaturated fatty acids 296
Testicles (rat), metabolism of polyunsaturated fatty acids 296
Milk: Cow, assay of lipoprotein lipase 124
Milk fat: Anhydrous, hydrocarbons and polychlorinated biphenyls 306
Mitochondria: Plant, lipid composition 235
Monolayers, fatty acid *see* **Fatty acid monolayers**
2-Monooleyl ether: Inhibition of triglyceride biosynthesis in adipose tissue and intestine (golden hamster) 415
Myelin
Development in the rat, metabolic aspects 541
Development in the rat, regional survey 541
Rat, lipid composition 541
From human cerebral cortex, phospholipid composition 656

N

Nicotine: Administration to rats, lack of effect on fatty acid composition in liver, testis, and adipose tissue 688
Nuclear magnetic resonance
Characterization of glycolipid sulfates 438
Characterization of phosphatidylglycerosulfates 422, 430
Nucleotides: Effect on activity of rat liver lysosomal lipase 243

O

Oligosaccharides: Released from glycosphingolipids by ozonolysis, gas–liquid chromatography 698
Ozonolysis: Of red cell glycosphingolipids 698

P

Palmitic acid: Metabolism in subcellular fractions of mouse brain 206
Palmitoyl CoA deacylase: Inhibition by hypolipidemic agents in rat liver microsomes 459
Perfused intestine, rat: Biosynthesis of lymph lipoprotein apoproteins 214
Perfused liver, rat: Biosynthesis of plasma lipoprotein apoproteins 214
Perfused lung, rat
Effect of CO_2 concentration on phospholipid metabolism 145
Studies on lung lipid metabolism 138
Peripheral nerve: Rabbit, glycolipids 41
Phosphatidate phosphatase: Properties and distribution in rat adipose tissue 517
Phosphatidylcholines: Of dog lung, macromolecular ultrastructural studies with *Crotalus atrox* venom 110
Phosphatidylglycerol: Of *Streptococcus faecalis* ATCC 9790, labeling of glycerol moieties 370
Phosphatidylglycerosulfate (diphytanyl ether analog)
From *Halobacterium cutirubrum*, determination of structure 422
Synthesis 430
Phosphatidylserine
Decarboxylation 595
Effect on activity of rat liver lysosomal lipase 243
Phosphatidylserine decarboxylase: Assay 595
Phospholipase A: From *Vipera palestinae* venom, phospholipase B activity 267
Phospholipase A_2
From *Crotalus atrox* venom, hydrolysis of dog lung phospholipids 110
Effect of Triton X-100 on kinetics 152
Phospholipase B: Activity in a purified phospholipase A from *Vipera palestinae* venom 267
Phospholipids
Effect of CO_2 concentration on metabolism in the isolated perfused rat lung 145
Quantitative estimation without acid digestion 695
In subcellular fractions of human cerebral cortex 656

o-Phthalaldehyde: Use in cholesterol determination 364
Phytene *see* **3,7,11,15-Tetramethyl-*n*-hexadec-2-ene**
***Pisum sativum*:** Lipid biosynthesis by isolated plastids 664
Plasma
Cholesterol, three-pool model of long-term turnover in man 178
Nonesterified fatty acids, quantitative extraction and determination 258
Rat postheparin, selective measurement of two different triglyceride lipase activities 286
Platelets
Human, diglyceride kinase 466
Human, sphingolipid composition 16
Polychlorinated biphenyls: In unsaponifiable fraction of anhydrous milk fat 306
Prostaglandin E_2
Biosynthesis from arachidonic acid (human skin) 377
Inhibition of biosynthesis by antiinflammatory drugs (human skin) 377
Inhibition of biosynthesis by unsaturated fatty acids (human skin) 377

R

Rainbow trout *see* ***Salmo gairdneri***
Retinol
Comparative biochemistry 525
Transport in plasma 525
Retinol-binding protein: Radioimmunossay in various species 525

S

***Salmo gairdneri*:** Liver dehydrogenase levels, effect of dietary cyclopropenoid fatty acids and aflatoxin B_1 643
Schizophrenic humans: *trans*-3-Methyl-2-hexenoic acid in sweat 495
Sciatic nerve: Rabbit, isolation and characterization of glycolipids 41
β-Sitosterol: 7α-Hydroxylation in cell-free preparation of rat liver 563
Skin: Human, biosynthesis of prostaglandin E_2 377
Sphingolipids: Of human platelets, composition 16
Squalene: Formation from acetyl CoA by enzymes of hog aorta 485
Sterols: Dietary, regulatory effect on hepatic cholesterol 7α-hydroxylase and 3-hydroxy-3-methylglutaryl CoA reductase in the rat 573
***Streptococcus faecalis* ATCC 9790:** Specific labeling of glycerol in glyceride-containing lipids 370
Surface-active fraction: In dog lung, model system for macromolecular ultrastructural studies with *Crotalus atrox* venom 110
Surface area
Of fatty acid monolayers, changes due to desorption 26
Measurement for microdetermination of lipids 9
Of naturally occurring lipids, relationship to amount in a film 9

T

Testicles: Rat, metabolism of arachidonic, docosa-7,10,13,16-tetraenoic, and linoleic acids 296
***Tetrahymena pyriformis W*:** Isolation of ceramide-monomethylaminoethyl phosphonate from lipids 327
3,7,11,15-Tetramethyl-*n*-hexadec-2-ene: Identification in milk fat 306
Theophylline
Effect on lipolysis and reesterification in rat adipose tissue 250
Effect on metabolic parameters of rat adipocytes 319
Three-pool model: Of long-term turnover of plasma cholesterol in man 178
Tocopherol: In red blood cells, spectrophotometric determination 533
Triglyceride(s)
In adipose tissue and intestine 415
Hydrolysis by two different lipase activities in rat postheparin plasma 286
Intramuscular, effect of exercise on concentration in dogs 54
Regulation of biosynthesis (golden hamster) 415
Triglyceride lipase
Activities, selective measurement in rat postheparin plasma 286
Extrahepatic and hepatic in rat postheparin plasma 286
Human adipose tissue, effect of glycerol on activity 592
Triton X-100
Dependence of phospholipase A_2 activity on 152
Effect on activity of rat liver lysosomal lipase 243
Turnover
Of cholesterol, estimated by computerized input–output analysis 189
Long-term, of plasma cholesterol in man, three-pool model 178

U

Unsaturated fatty acids: Inhibition of biosynthesis of prostaglandin E_2 in human skin 377
Unstirred water layer: Role in uptake of water-soluble fatty acids and alcohols by rat intestinal mucosa 475

V

Very low density lipoprotein: Serum, effect of glucagon in hyperlipidemic rats 312
***Vipera palestinae*:** Venom, phospholipase activity 267
Vitamin B_{12}: Deranged metabolism in man, branched-chain and odd-numbered fatty acids and aldehydes in nerve lipids of a patient 69
Vitamin E: In red blood cells, spectrophotometric determination 533

Y

Yeast: Isolation of 2,3-*erythro*-dihydroxyhexacosanoic acid and homologs from cerebrin phosphate 406

NEW METHODS INDEX

Volume 14, Numbers 1–6

Compiled by H. A. I. Newman and Charlotte Cain

The numbers in this index refer to Entry Numbers in the New Methods listings.
These are found on the pages of Volume 14 given below.

Nos. 1–78, pp. 129–131
Nos. 79–143, pp. 262–264
Nos. 144–222, pp. 373–375
Nos. 223–316, pp. 504–507
Nos. 317–374, pp. 602–603
Nos. 375–446, pp. 701–703

ENTRY NO.

Acetoacetate: Enzymatic method for determination 254
Acetyl CoA: Determination, interference by a contaminant in malate dehydrogenase 96
Acyl CoA: Oxalate–silica gel TLC 35
Acyl hydrolase: Improved method for determining lipolytic activity 369
Aflatoxins
Analysis in products containing alcohol 205
Determination in corn and soybeans 135
Fast screening method for detection in cottonseed products 301
Fluorometric method for estimation 206
M_1; derivative method for chemical confirmation of identity 77
raw milk, determination by modified Jacobson, Harmeyer, and Wiseman method 133
TLC and physical and chemical properties 136
M_2, TLC and physical and chemical properties 136
Quantitative TLC method for determination in cottonseed products 134
Rapid qualitative test 302
***sec*-Alcohols:** Isolation from *Isotachis japonica* 296
Alkanes
Normal; C_{12} to C_{32} GLC, capillary, in saturated hydrocarbons from crude oil or rock extract 227
solubilities in water 334
β-Apocarotenals: Separation by reversed-phase and thin-layer chromatography 282
Antioxidants
Identification and semiquantitative assay by TLC 427
Oils and fats, rapid voltammetric method for estimation 364
Vegetable oil, flame ionization GLC 236
Bile acids
5α-Cholestan-26-oic acids, synthesis 248
Conjugated and unconjugated, in duodenal fluid, analysis by densitometry after paper electrophoresis 329
Conjugates in jejunal juice, analysis by TLC, direct densitometry 330
Extraction from liver tissue during preparation for electron microscopy, GLC 6
Fecal, analysis, isotopic compared with chromatographic method 249

ENTRY NO.

α-Hydroxy, conjugates, direct enzymatic assay 382
Lithocholic acid, identification in serum of healthy humans 331
Plasma, analysis 222
Taurine-conjugated trihydroxy, in rat bile, solvent system for TLC separation 381
Calciferol: Gas chromatography 157
Campesterol: Separation from β-sitosterol on hydrophobic hydroxyalkyl Sephadex LH-20 19
Carbohydrates: New reaction for colorimetric determination 52
Cardiolipin
Preparative TLC 173
Simplified technique for thin-layer microchromatography 16
Carnitine palmitoyl transferase: Rapid spectrophotometric assay 368
Carotene
Alpha and beta, mass spectrometric comparison of ordinary and fully deuterated 187
Determination in dried plant materials 277
Fluorescence microphotometry for assay of conversion into vitamin A 276
Serum, liver, of a Rocky Mountain mule-deer 184
Carotenoids
C_{40} pigments, isolation and identification in *Halobacterium cutirubrum* 73
C_{50}, circular dichroism and relative configuration 57
Factors affecting mass spectra of, intensity ratio of M−92/M−106 ions 185
Related to vitamin A, application of magnesium hydroxide as a TLC adsorbent for separation 114
Tea, TLC 59
Ceramide pentasaccharides: From rabbit erythrocytes and Forssman antigen, amino sugar linkages determined by methylation 424
Ceramides
Aminoethylphosphonate, from oyster adductor by GLC–mass spectrometry, identification of molecular species 272
Monomethylaminoethylphosphonate, isolation from lipids of *Tetrahymena pyriformis W* 418

ENTRY NO.

Cerebrosides
Degradation of sphingosine bases during acid hydrolysis 178
Mass spectra of acetyl derivatives of homogeneous 180
Methanolysis with boron trifluoride–methanol 53
Simplified technique for thin-layer microchromatography 16

Cholesterol
Automated spectrophotometric method for analysis in plasma 154
Bovine blood serum as a substitute for human serum for quality control of determination of 20
Determination using *o*-phthalaldehyde 387
GLC 157
Histochromatography and quantitative determination 243
Hydroperoxides, gas chromatographic differentiation 237
Labeled, recovery from thin-layer chromatograms 86
β-Lipoprotein, quantitation 121
Method for measuring total hepatic 87
Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17
Nuclear magnetic resonance study of interactions with lecithin 140
Separation from a complex mixture of lipophilic and hydrophilic substances through gel chromatographic distribution on Sephadex LH-20 13
Serum; automated determination with *o*-phthalaldehyde reagent in the Vickers M-300 biochemical analysis system 158
determination, introduction of microtechniques in elementary science courses 21
factors affecting the results of determinations 84
GLC determination 225
rapid determination by modified "Pearson method" 332
TLC 380
Simple TLC method to determine triglyceride/cholesterol content of skin tumors 83
Sulfate, assay by enzymatic radioisotopic displacement 155

Cholesterol esters
Determination, introduction of microtechniques in elementary science courses 21
Histochromatography and quantitative determination 243
Labeled, recovery from thin-layer chromatograms 86
Preparation of vinyl polymer containing long side chain 383
Serum; measurement of initial rate 370
TLC 380

Cholesteryl methacrylate: Bulk polymerization 388

Cholesteryl palmitate: Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17

Chromatography, thin-layer
Charring with sulfur trioxide for improved visualization and quantitation of thin-layer chromatograms 82
Micromethod for quantitative determination of lipids 17
Quantitative, with aid of reaction GLC 440

Dehydrosqualene: Isolation and identification in *Halobacterium cutirubrum* 73

Detergents: Polyoxyethylene nonionic surfactants, TLC spot densitometry 442

ENTRY NO.

Diglycerides
Glycosyl, synthesis 411
Histochromatography and quantitative determination 243
Serum; TLC 380
use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11

Dihydrotachysterol: GLC 157

Dipalmitin: Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17

Diols: Lipid-bound short-chain, identification and quantitation 351

***N*-Docosane:** Simple, Raman spectra, conformation-dependent features 377

***N*-Dodecanoic acid:** Simple, Raman spectra, conformation-dependent features 377

Enzyme reactions: In monolayers, a membrane model 439

Epoxyoctadecanoates: Methyl, preparation and properties of complete series 27

Ergosterol: Photochemical isomers, gas chromatography 429

Ergosterol acetate peroxide: Synthesis, unusual 111

Esterase: Determination with thiol esters as substrates 289

Esterified cholesterol: Serum, use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11

Fat-soluble vitamins: Identification and semiquantitative assay by TLC 427

Fats: Automatic melting point determination 15

Fatty acid azirines: Preparation and reactions 93

Fatty acid desaturation: Tritium release assay for oleic acid 28

Fatty acid esters
Influence of methylsubstituent position on retention times in GLC of higher monomethyl-branched 1
Octadecadienoate and octadecenoate isomers, *cis* and *trans* analysis by GLC 80
Polyunsaturated, separation by argentation column chromatography on silicic acid 94
Unsaturated, α,β- or β,γ-, novel stereoselective or stereospecific alkylation 394
Unsaturated carnitine, preparation and some aspects of metabolism 26

Fatty acid methyl esters
Cyclopropane, preparation with methanolic boron trichloride and boron trifluoride and GLC 2
Electron spin resonance of free radicals formed in irradiated 393
H-1–H-2 hybrid, gas chromatography–mass spectrometry 202
Linoleate and linolenate, tritium labeling from acetylenic precursors 378
Methyl 9-hydroxy stearate, oxidative cyclization leading to 1,4 (and 1,5) epoxides 89
Methyl 12-hydroxy stearate, oxidative cyclization leading to 1,4 (and 1,5) epoxides 89
Methyl 9-hydroxy-octadec-*cis*-12-enoate, oxidative cyclization leading to 1,4 (and 1,5) epoxides 89
Methyl ricinoleate, oxidative cyclization leading to 1,4 (and 1,5) epoxides 89

ENTRY NO.

Methyl sterculate, synthesis of six lower homologs 170
Nondecadiynoate, tritium labeling from acetylenic precursors 378
Saturated deuterio 256
Unsaturated two-step homogeneous conjugation and hydrogenation 25

Fatty acids
Acetates, efficient procedure for preparation as insect sex attractants 168
Branched, monomethyl-, GLC, open-tubular separations to indicate even-numbered carbon substitutions 224
C_2 to C_5 mixtures, gas-chromatographic method for determination of low concentrations of acrylic acid in biological materials 321
Cecropia juvenile hormone, purification and quantitative determination 390
Conjugated, formation of an artifact during methylation 29
Crude, analysis for, in feed-grade fats 97
Dienoic, isomerization with rhodium compounds 33
Dipropyl acetic acid analysis by microdiffusion and GLC 231
Diunsaturated, ^{13}C-NMR spectroscopic studies 415
9,12-Diunsaturated n-C_{18} acids, synthesis, silver ion chromatographic and NMR spectroscopic properties 165
1,4- and 1,5-Epoxides, neighboring group participation in the oxymercuration–demercuration reaction 338
Esterification with *N,N*-dimethylformamide dialkyl acetals for GLC 145
Fish oil, combined argentation column chromatography identification and GLC 340
Gas chromatography, rapid method to process and assay 226
Gel filtration liquid chromatography, Pye liquid chromatography detector 163
Higher, distillation and thermal stability 403
Histochromatography and quantitative determination 243
Hydroperoxides, colorimetric determination 389
Hydroxy, *N,N*-dimethyl-*p*-aminobenzolazophenacyl esters, TLC 32
3-,ω4-, ω3-, and ω2-Hydroxy, steric analysis by GLC 319
D-β-Hydroxybutyrate in blood, semiautomated reaction rate analysis 391
Ion exchange adsorption 346
Long-chain; micromethod for estimation in fecal fat 395
unsaturated esters, application of oxymercuration–demercuration reaction 337
Lower molecular weight, Bligh and Dyer extraction method 341
Medium-chain; benzyl esters, quantitative preparation and gas chromatography 230
micromethod for estimation in fecal fat 395
Methyl-branched, anomalous peak broadening behavior in GLC on porous polymer bead columns 79
10,11-Methylene-9-nonadecene, analog of sterculic acid, synthesis and biological characterization 335
7-Methyl-7-hexadecenoic acid, isolation from lipids of *Mola mola* 253
Monoethylene, longer-chain, isomer subfractionation effects in hydrogenated oils 162

ENTRY NO.

Monoethylenic, isomers in partially hydrogenated marine oils 255
Monounsaturated; ^{13}C-NMR spectroscopic studies 415
ozonometric determination 169
Nonesterified; microdetermination 344
in plasma, extraction and determination 336
Normal, solubilities in water 334
Normal 1,2-epoxypropyl esters, thermal analysis 392
Peracids, colorimetric determination 389
Plasma, colorimetric method 399
Polymorph identification by infrared 91
Polyunsaturated, ^{13}C-NMR spectroscopic studies 415
Propionyl CoA in biological material, sensitive assay 345
Reversed-phase chromatography on hydrophobic Sephadex 92
Saturated; deuterio 256
^{13}C-NMR spectroscopic studies 415
Short-chain; analysis by microdiffusion and GLC 231
benzyl esters, quantitative preparation and gas chromatography 230
effect of column length and column packing mesh size on analysis by gas chromatography using Chromosorb 101 235
GLC on Dexsil 300GC 320
Specificity of Holczinger's reaction 164
Unsaturated; reactions with aldehydes during histological fixation 258
oxygenation in seeds during storage 402
Volatile, TLC of *N,N*-dimethyl-*p*-aminobenzolazophenacyl esters 32

Fatty acyl diesters: Of diols, separation from triglycerides 104

Fatty alcohols
Gas chromatography of, rapid method to process and assay 226
3-,ω4-, ω3-, and ω2-Hydroxy, steric analysis by GLC 319
Δ3t, Δ4, and Δ5 Identification, isolation, and estimation by oxymercuration–demercuration 339
Normal, solubilities in water 334
Synthesis of higher primary, from liquid paraffins 34
Unsaturated, efficient procedure for preparation as insect sex attractants 168

Fatty aldehydes: Identification of peaks in GLC by use of subtractor columns with free fatty acid liquid phase 147

Fatty amides: Oxalic acid salts of C_{18} saturated and unsaturated, preparation and properties 398

1,4-Fatty epoxides
Formation from two series of trihydroxysteric acids by acid-catalyzed cyclization 88
Oxidative cyclization of some long-chain hydroxy esters leading to 89

Fatty esters: Polyunsaturated, autoxidation on silica 400

Free cholesterol: Serum, use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11

Free fatty acids
Capillary gas chromatography of free saturated C_2–C_6 5
Colorimetric microdetermination 401
Fatty oils, rapid methods for determination 31
2-Hydroxy, oxalate–silica gel TLC 35

ENTRY NO.

Plasma, determination of total and splanchnic turnover in man 103
Porous polymer bead packings and formic acid vapor in GLC of volatile 90
Qualitative and quantitative investigation in depot fat 99
Separation of small amounts from large amounts of neutral fats on Sephadex LH-20 100
Serum; determination 397
TLC 380
use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11
Short-chain, GLC with porous polymer bead packings and formic acid vapor 90

Gangliosides
Brain; extraction, purification, and fractionation 273
goldfish 422
Detection, determination, and metabolism in vitro in mammalian sympathetic ganglia 51
Disialosylpentahexosylceramide from human brain, isolation and structural determination 360
Globoside, Tay-Sachs, total synthesis 358
Isolation from electric organ of *Electrophorus electricus* 274

Gas chromatography: A practical quantitative method for quantitating two overlapping unresolved peaks 7

Glycerides: Acyl migration, solid phase isomerization of 1,2-di- to 1,3 isomers 405

Glycerol
Determination in phospholipids by GLC 146
cis-10-(Hexadecen-1-yl)-2-stearoyl-*sn*-, synthesis and structure 352
(^{18}O), 1-Phosphate, isotopic distribution, by mass spectrometry 347
Total lipid, serum, measurement 407

Glycerophosphorylcholine: 1,2-Dilinoleoyl- and 1,2-dipalmitoyl-*sn*-3-, synthesis 44

Glycolipids
Acetylated galactocerebrosides, 220-MHz PMR spectra, structural studies 421
Amino sugar linkages determined by methylation 424
Isolation and characterization from rabbit sciatic nerve 359
Quantitative TLC in animal tissues 54

Glycophospholipids: Phosphatidyl-1-glucose, synthesis 179

Glycosides: Methyl, gas chromatographic quantitation, application of trifluoroacetyl derivatives to sugar and lipid chemistry 420

Glycosphingolipids
N-Acetylgalactosamine, specific radioactive labeling by galactose oxidase–sodium borohydride method 182
High-pressure liquid chromatography of neutral 109

***N*-Hexadecanoic acid:** Simple, Raman spectra, conformation-dependent features 377

Hexadecanol: ^{3}H- and ^{14}C-zonal profile scan of TLC of 423

Hexadecyldihydroxyacetone: ^{3}H- and ^{14}C-zonal profile scan of TLC of 423

Hexadecylglycerol: ^{3}H- and ^{14}C-zonal profile scan of TLC of 423

Hydrocarbon(s)
Analysis in gasoline by gas chromatography 203
Aromatic, liquid counterdiffusion in type Y zeolites 131
Automatic gas-chromatographic measurement of C_1–C_5 144
Chlorinated; Coulson conductivity detector for residues, effects of heating and cooking method in chicken tissues 299 75
Chromatographically reversible adsorption on walls of GLC copper capillary columns 238
Desorption in moving layers of zeolites 297
Deuterated, thermal isotope effects in mass spectra 294
Extraction method for paraquat aerosols containing 128
Fast analysis in capillary columns by GLC 81
GLC with capillary columns 228
Influence of methyl substituent position on retention times in GLC of higher monomethyl-branched 1
Intrinsic specifications from analysis of a mixture 441
Magnetic properties, semiempirical calculation 201
Mixtures, GLC analysis 4
Mono- and diolefinic, deuteriogenation catalyzed by Pd complexes 298
Multicomponent gases, mathematical miniature-scale absorption process 295
Naphthenic, liquid counterdiffusion in type Y zeolites 131
Paraffins, C_{10}–C_{18}, from petroleum fractions by improved Parex procedure 204
n-Paraffins isolated from *Isotachis japonica* 296
Polycyclic aromatic; determination by capillary GLC, in automobile exhaust and air pollutants 229
separation of mixture in automobile exhaust gas 203
Polycyclic, determination in air by GLC with high efficiency packed columns 132
Residues in water 292
Short-chain, saturated, separation by capillary GLC 233
Thermal isotope effects in mass spectra 294
Unsaturated, $J(^{13}C\text{-}H)$ spin–spin coupling constants calculated by maximum overlap method 74

Hydrocarbon systems: Binary, liquid sorption equilibria in type Y zeolites 130

25-Hydroxycholecalciferol: Plasma, measurement in man 55

Hyperlipemias: Serum lipid screening and typing 67

Hyperlipoproteinemia: Screening procedure for detecting and characterizing 195

Inositol phospholipids: Preparative TLC 173

20-Isocholesterol: GLC and TLC 159

Ketones: Methyl-branched, anomalous peak broadening behavior in GLC on porous polymer bead columns 71

Lecithin(s)
Acetylenic acids to form, selective transfers 416
Analogs, potential inhibitors of phospholipase A, chemical synthesis 41
Bimolecular leaflets, X-ray diffraction studies with incorporated fluorescent probes 142
Cholesterol acyltransferase, serum, determination 126
Crude egg, chromatographic separation of pure phosphatidylcholine 354
Egg and egg–cholesterol mixtures, laser Raman spectroscopic study 316
NMR study of interactions with cholesterol 140
Preparative TLC 173
Products from catabolism 266
Serum, TLC 380

ENTRY NO.

Synthesis of optically active diether phosphinate analogs 46

Lecithin/sphingomyelin ratio: In respiratory distress syndrome 47

Linoleate: Hydrogenation and deuteration of conjugated isomers with palladium, platinum, nickel, and Lindlar catalysts 343

Linoleic acid
Breakdown of hydroperoxides of, by determination of peroxide value 257
Determination by isomerization at low temperatures 166

Linolenate: Hydrogenation and deuteration of conjugated isomers with palladium, platinum, nickel, and Lindlar catalysts 343

Lipase: Turbidimetric procedure for determination 434

Lipid content: Histological determination in liver biopsies 244

Lipid peroxides: Determination in biological media 241

Lipids
Cerebral spinal fluid, comparison of two methods for quantitative determination by TLC 10
Classes, analysis by gradient elution adsorption chromatography 328
Column chromatography, elution selectivity chromatographic data 326
Complex, petroleum ether–rubber dialysis for isolation 49
Cyclopropenoic, NMR assay 30
Determination in fish meal 150
Fecal fat determination in celiac disease 246
Fluorescent, measurement of peroxidation products in biological systems and tissues 325
Glyceride-containing, specific labeling of glycerol moiety in *Streptococcus faecalis* ATCC 9790 410
Histochemical demonstration of, rapid method 151
Histochemistry; problems of bromination 149
specificity of Holczinger's reaction for fatty acids 164
Improved visualization and quantitation of thin-layer chromatograms by charring with sulfur trioxide 82
Lipofuscins, mass isolation from normal human heart and liver 327
Mass spectrometry 153
Microdetermination, surface area films of naturally occurring classes 324
Neutral; photoreflectometric method for analysis 152
separation of classes of partial glycerides by one-dimensional TLC 349
Osmium fixation 245
Osmium tetroxide fixation 242
Peroxidation using polarographic method 148
Plasma, isolation by affinity chromatography 240
Serum, evaluation of methods available to hospital laboratory 379
Tetrahymena pyriformis, chromatographic fractionation 247
TLC, elution selectivity principles and a graphic method for pattern analysis of chromatographic data 326
Total serum; chemical basis of the sulfo-phospho-vanillin reaction for estimating 14
improved determination by the sulfo-phospho-vanillin reaction 12

ENTRY NO.

Lipolytic activity: Serum, photometrically with 1,5-diphenylcarbohydrate 70

Lipopolysaccharides
Heptose and hexose determination, modification of the cysteine–sulfuric acid method 183

Lipoprotein lipase
Activity in human adipose tissue, effect of ethyl chlorophenoxyisobutyrate 199
Effect of different albumin preparations on activity 127
Human adipose tissue, rapid determination 290
Milk, "clearing" assay in agarose gel 371
Semiautomatic determination in human and animal tissue 437

Lipoprotein X: Serum, determination 126

Lipoproteins
Alpha-, agarose gel electrophoresis quantitation 284
Beta-, effect of riboflavin tetrabutyrate on degradation by fatty acid peroxide 124
Beta-, quantitation of cholesterol 121
Blood, quantitative method with cellulose acetate electrophoresis 62
Concentration gradient electrophoresis of plasma from patients with hyperbetalipoproteinemia 64
Electrophoresis; on cellulose–acetate 288
in sucrose medium 196
High density; human serum, isoelectric heterogeneity 189
plasma, composition and structure 123
Human plasma, gradient gel electrophoresis 432
Human serum high density; spin label method for protein–protein and protein–lipid interactions 120
degradation products following dehydration by rotary evaporation and solubilization 65
Hyperlipoproteinemia, screening procedure for detecting and characterizing 195
Iodination of plasma, comparison of methods 66
Lipid–protein complexes from egg yolk 287
Lipid-staining procedure, rapid, for paper electrophoretograms 365
Lp(a), from human plasma, protein and carbohydrate composition 190
(LP-X) of obstructive jaundice, determination 194
Plasma, polyacrylamide-gel block-electrophoresis 367
Protein determination of turbid 193
Proteolipid apoprotein, Folch-Lees fraction, isolation from bovine brain myelin by rapid water partitioning procedure 286
Serum; abnormalities, polyacrylamide-gel disc-electrophoresis as a screening procedure 366
determination of true mobility, isoelectric point, and molecular size by agarose gel electrophoresis 192
electrophoresis on Cellogel, normal values, comparison with SML-profiling, ultracentrifugation 284
gradient flotation in swing-out rotors 433
an improved polyacrylamide procedure for electrophoresis 122
Very low density, human, heterogeneity by gel filtration chromatography 125

Lipoxygenase
Agarose-bound, soybean, properties 435
Products, simplified gas chromatographic procedure for analysis 323

Lyso and serine phospholipids: Preparative TLC 173

ENTRY NO.

Lysolecithin
Products of catabolism 266
Serum, TLC 380

Membranes
Acholeplasma, ^{13}C NMR spectra, with ^{13}C-labeled phospholipids 221
Fluorescent probe determination of microviscosity and order in the hydrocarbon region of phospholipid and phospholipid–cholesterol dispersions 315
Sarcoplasmic reticulum, ^{13}C and ^{1}H NMR relaxation measurement of lipids 143
Spin-label studies of dynamics of lipid alkyl chains in biological membranes, role of unsaturated sites 141

Methyl esters: Long-chain fatty acids, preparation 396

***o*-Methyl glycosides:** Trifluoroacetate derivatives, GLC 110

Methyl 12-hydroxysterate: NMR chemical shift reagents in structural determination 404

Methyl linoleate: Separation from a complex mixture of lipophilic and hydrophilic substances through gel chromatographic distribution on Sephadex LH-20 13

Methylmalonyl CoA mutase: Radiochromatographic assay 197

Methyl octadecadiynoate: Hydrogenation of triple bonds to double bonds 167

17-Methyl octadecanoate: Simple, Raman spectra, conformation-dependent features 377

2-DL-Methyl octadecanoic acid: Simple, Raman spectra, conformation-dependent features 377

Methyl ricinoleate: NMR chemical shift reagents in structural determination 404

Methyl santalbate: Hydrogenation of triple bonds to double bonds 167

Methyl stearate: Separation from a complex mixture of lipophilic and hydrophilic substances through gel chromatographic distribution on Sephadex LH-20 13

Monoglycerides
Acetyl, preparation and phase behavior 263
Enzymatic glycerol analysis 36
Histochromatography and quantitative determination 243
Serum; TLC 380
use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11

Monoglycosylceramides: Mass spectra of acetyl derivatives of homogeneous 180

1-Monolaurin: Simple, Raman spectra, conformation-dependent features 377

1-Monomyristin: Simple, Raman spectra, conformation-dependent features 377

Monopalmitin: Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17

1-Monostearin: Simple, Raman spectra, conformation-dependent features 377

1,4-Naphthoquinone: Phosphorescence spectra, lifetimes 431

***N*-Nonadecane:** Simple, Raman spectra, conformation-dependent features 377

Octadecane: Separation from a complex mixture of lipophilic and hydrophilic substances through gel chromatographic distribution on Sephadex LH-20 13

Octadecenoates: Methyl, behavior in argentation chromatography and GLC 24

Octadecynoates: Methyl, behavior in argentation chromatography and GLC 24

Oils
Fatty, rapid methods for determination of free fatty acid content 31
Soybean, epoxy-triglycerides 40

Olefins: Microdetermination of olefinic unsaturation reaction with *n*-bromosuccinimide in polar medium 98

Oleic acid
Absorption, comparison as measured isotopically and by titration in vitro 95
Catalytic dimerization in a continuous flow reactor 259
Desaturation, tritium release assay 28
Enzymatic isomerization to *trans*-Δ^{10}-octadecenoic acid 260

Oleic/linoleic acid ratio: Microanalytic procedure 261

11-Oxygenated cholesterols: GLC and TLC 159

Palmitic acid
Detection of asymmetric distribution on TLC 423
Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17
Separation from a complex mixture of lipophilic and hydrophilic substances through gel chromatographic distribution on Sephadex LH-20 13

***N*-Palmitoyl-*N'*-(*O*-β-trimethylammonioethyl-phosphoryl) putrescine:** Synthesis 48

Paraffins: Liquid, synthesis of higher aliphatic primary alcohols from 34

Parasiticol: TLC and physical and chemical properties 136

Phosphate: Isobutyl-acetate-extraction and determination in seawater 267

Phosphatidic acid: Simplified technique for thin-layer microchromatography 16

Phosphatidyl amino alcohols: Mass spectrometry for detection of molecular species and use of low voltage spectra and metastable scanning in the elucidation of structure 176

Phosphatidylcholine
[^{14}C]Acyl-labeled, of high specific activity, simple biochemical method for preparation 43
Analysis by TLC and X-ray emission spectrometry 42
Chromatographic separation from crude egg lecithin 354
Glycerol-labeled, biosynthetic method for preparation 268
Method for estimating ratio with sphingomyelin in amniotic fluid 107
Polar groups determined by NMR spectroscopy 265
Simplified technique for thin-layer microchromatography 16

Phosphatidylethanolamine
Analysis by TLC and X-ray emission spectrometry 42
Bovine white matter, preparation and properties 412
Differential labeling by a membrane-impermeable reagent in intact human erythrocytes and cell ghosts 171
Polar groups determined by NMR spectroscopy 265
Serum, TLC 380

ENTRY NO.

Simplified technique for thin-layer microchromatography 16
Phosphatidyl-1-glucose: Synthesis 179
Phosphatidylinositol
Analysis by TLC and X-ray emission spectrometry 42
Simplified technique for thin-layer microchromatography 16
Phosphatidylserine
Analysis by TLC and X-ray emission spectrometry 42
Simplified technique for thin-layer microchromatography 16
Phosphoglycerides: Synthesis 175
Phospholipase A
Chemical synthesis of some lecithin analogs as potential inhibitors 41
Conductimetric assay 177
Phospholipase A activity: Human duodenal juice, determination with [^{32}P]phosphatidylcholine 438
Phospholipase D
Activity in higher plants, rapid method for determination 68
Bond hydrolyzed by cardiolipin-specific 353

Phospholipids
[^{14}C]Acyl-labeled, of high specific acitvity, simple biochemical method for preparation 43
Conductimetric assay 177
Determination of glycerol of, by GLC 146
Direct fluorometric microdetermination on TLC 45
Gel chromatography, separation from glucose-6-phosphatase 174
Histochemical fixation and solubility in fixatives 270
Histochemical staining 269
Histochromatography and quantitative determination 243
^{13}C-labeled, ^{13}C-NMR spectra of acholeplasma membranes containing 221
^{13}C-NMR spectroscopic studies 415
Quantitative liquid scintillation radioassay from thin-layer chromatograms 50
Semimicromethod for determination 108
Serum, use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11
Phosphonolipids
Alpha-octadecyl-beta-hexadecanoyl-L-alpha-glycerate, synthesis 264
Isolation by ascending dry-column chromatography 271
Synthesis of naturally occurring 105
Phosphorus: Lipid, influence of silica gel G on quantitative analysis 417
Phosphorylcholine: 1-Acyl ethylene glycol-2-, facile synthesis 419
Photodensitometry: Micromethod for quantitative determination of lipids by use of 17
Plasmalogen: Demonstration of, with periodic acid 172
Polyalcohol fatty acid partial ester: Qualitative TLC 76
Polycyclic aromatic hydrocarbons: Liquid chromatography 129
Polycyclic hydrocarbons: Determination in air by gas chromatography with high efficiency packed columns 132
Porous polymer beads: Anomalous gas chromatogram due to oxidation of, by a sample containing oxygen gas 8

ENTRY NO.

Prostaglandin synthetase: Rapid spectrophotometric assay 200

Prostaglandins
A; antiserum to, preparation of specific 218
isomerase, cat plasma, purification and properties 436
in subnanogram range, quantitative determination 313
Alkyl oxime–trimethylsilyl, GLC 232
Allenyl, synthesis 207
Analogs, synthesis by 1,4 addition reactions 138
B, in subnanogram range, quantitative determination 313
Comparison of dialysis, thin-layer and silicic acid column chromatography for isolation from biological material 137
$\Delta^8(12)$-Dehydroprostaglandin E_1, synthesis 374
11-Desoxyprostaglandins, synthesis 217
DL-Dihydroprostaglandin E_1, synthesis 374
9α,11α-Dihydroxy-15-ketoprost-5-enoic acid, radioimmunoassay for 211
E; gas chromatographic determination of nanogram amounts 373
regiospecific epoxide opening with acetylenic alanes 210
in the subnanogram range, quantitative determination 313
E_1; optical antipodes, stereoselective synthesis 220
release from micropipettes in vitro 306
in serum, isotope derivative method for analysis using 2-amino[^{35}S]thiazole reagent 304
synthesis 139
E_2; 15 methyl analogs, termination of pregnancy with 308
in serum, isotope derivative method for analysis using 2-amino[^{35}S]thiazole reagent 304
synthesis from (15*R*)- and (15*S*)-PGA_2 78
Enzymic fluorometric assay 216
15-Epi-$PGF_{2\alpha}$ in $PGF_{2\alpha}$, determination 219
Extracts containing, improved purification and chromatography 311
F; gas chromatographic determination of nanogram amounts 373
radioimmunoassay 305
regiospecific epoxide opening with acetylenic alanes 210
$F_{1\alpha}$, synthesis 215
$F_{2\alpha}$; in female human urine, vapor-phase analysis 445
15 methyl analogs, termination of pregnancy with 308
synthesis from (15*R*)- and (15*S*)-PGA_2 78
Gas chromatography–mass spectrometry assay 303
Heptafluorobutyrate methyl esters, gas chromatography 213
Immunochemical detection by prostaglandin-coated bacteriophage T_4 and radioimmunoassay 208
15-Keto-prostaglandin-$F_{2\alpha}$, antibodies to 212
Prostanoyl carnitine, preparation and characterization 443
Rat vesicular glands, analysis 446
Radioimmunoassay 309, 314
Separation on a hydrophobic Sephadex derivative 444
Stimulatory effects upon luteinization of rhesus monkey granulosa cell cultures 307
Synthesis by conjugate addition of a functionalized organocopper reagent 310
Synthesis; stereoselective, of E_1 220
stereospecific total, E and F series of natural and racemic 209
Trimethylsilyl; and alkyl oxime–trimethylsilyl derivatives, GLC 214

ENTRY NO.

GLC 232
Proteolipid protein: Modification of the Lowry procedure for analysis 63
Psychosine: Degradation of sphingosine bases during acid hydrolysis 178
Radioactivity: Improved method for collection and measurement in compounds separated by GLC 9
Retinal: Anion-induced wavelength regulation of absorption maxima of Schiff bases 56
Retinol: Separation of vitamins D by argentation TLC 283
Retinoic acid: 4-Oxo, preparation and properties of methyl ester of 112
Saturated aliphatic esters: Relation of topology information between structure and retention time in GLC 3
Sitosterol
Beta, separation from campesterol on hydrophobic hydroxyalkyl Sephadex LH-20 19
Mixed with stigmastanol and stigmasterol, analysis 386
Purification 384
Sphingolipids: ^{13}C-NMR spectroscopic studies 415
Sphingomyelin
Analysis by TLC and X-ray emission spectrometry 42
Degradation of sphingosine bases during acid hydrolysis 178
Erythrocytes, analysis 414
Method for estimating ratio with phosphatidylcholine in amniotic fluid 107
Radiochemical decomposition of N-$^{14}CH_3$-labeled 413
Serum, TLC 380
Squalene: Isolation from a Nigerian petroleum 72
Steroid: Diols, trimethylsilyl ethers in characterization by gas chromatography–mass spectrometry 317
Sterol(s)
Acetylated plant, GLC liquid phases for resolution 234
Analysis, application to sterol balance studies 161
Biosynthesis in *Chlorella emersonii,* triparanol inhibition 156
Cardiotonic aglycones, TLC separation 250
Dietary and fecal neutral, identification and quantitation by mass spectrometry 18
[4-^{14}C]Ergocalciferol, synthesis 252
[4-^{14}C]Ergosterol, synthesis 252
Glycosides, TLC separation 250
Hydroperoxides, detection on thin-layer chromatoplates by means of Wurster dyes 22
Isolation from fats and oils 251
C-24 Isomeric, NMR spectra 23
Natural, trimethylsilyl ethers in characterization by gas chromatography–mass spectrometry 317
Separation from vitamins D and retinol by argentation TLC 283
Sterol esters: Preparative TLC 173
Steryl acetates: Separation by silver ion chromatography 85
Stigmastanol: Mixed with stigmasterol and sitosterol, analysis 386
Stigmasterol
Hydrogenation 385
Mixed with stigmastanol and sitosterol, analysis 386
Sulfatides: Simplified technique for thin-layer microchromatography 16
Sulfolipids: Sulfur, direct determination by atomic absorption spectrometry in a nitrogen-separated nitrous oxide–acetylene flame 181
Sulfo-phospho-vanillin reaction
Chemical basis for estimating total serum lipids 14
Determination of total serum lipids 12
Surfactants: Nonionic, critical micelle concentration 300

Tocopheryl
Acetate, application of a shift reagent in NMR spectroscopy 60
Alpha, quantitative determination in feed and foodstuffs including oils and fats 115
Free, in plant oils by liquid–solid chromatography 430
Mass spectra 58
Oils and fats, rapid voltammetric method for estimation 364
Quantitative analysis by high-speed liquid chromatography 119
Triglyceride lipase: Assay of nanogram levels with a radioactive substrate 69
Triglycerides
Automated spectrophotometric method for analysis in plasma 154
Bovine blood serum as a substitute for human serum for quality control of determination of 20
Component, of rat adipose tissue, after fractionation of classes into groups by GLC 318
Epoxy-, in soybean oil 40
Fatty acid analysis for detection of synthetic and adulterated butterfat 38
GLC 406
Histochromatography and quantitative determination 243
Human blood, TLC and GLC 408
Micromethod for estimation in fecal fat 395
Plasma; determination with a fully automated method 102
determination of splanchnic secretion rate in man 103
Preparative TLC 173
Of rat adipose tissue, studied after fractionation into classes by silver ion TLC 101
Saturated, pyrolysis 409
Separation from fatty acyl diesters of diols 104
Serum; automatic extraction and analysis 37
automation of enzymatic determination 39
determination with a fully automated method 102
semiautomated enzymatic method for, by the Beckman DSA-560 350
stable reagents for determination by colorimetric Hantzsch condensation method 348
TLC 380
use of TLC on silica gel for fractionation and measurement in the routine clinical laboratory 11
Simple, TLC method to determine triglyceride/cholesterol content of skin tumors 83
Trilaurin: Simple, Raman spectra, conformation-dependent features 377
Tripalmitin
Micromethod for quantitative determination by use of TLC, photodensitometry, and an internal standard 17
Simple, Raman spectra, conformation-dependent features 377
Vitamin A
Application of magnesium hydroxide as a thin-layer

ENTRY NO.

chromatographic adsorbent for separation from related carotenoids 114
Fluorescence microphotometry for assay of conversion of carotene into 276
Fluorescence microscopy, in pregnant rat 186
Human serum and liver, factors affecting laboratory management of analyses 280
Isoanhydro, application of a shift reagent in NMR spectroscopy 60
Plasma, clinical evaluation of an improved TFA micromethod 363
Quantitative analysis by high-speed liquid chromatography 119
Retro, application of a shift reagent in NMR spectroscopy 60
Serum; clinical evaluation of an improved TFA micromethod 363
liver, of a Rocky Mountain mule-deer 184
Vitamin A palmitate: Quantitative analysis by high-speed liquid chromatography 119
Vitamin D
[4-^{14}C]ergosterol and 4-^{14}C ergocalciferol 252
GLC, cod-liver oil 425
Liquid chromatographic separation from precalciferol 278
Reaction with tetracyanoethylene, possible method for estimation 113
Separation; from biologically inactive compounds by TLC 275
from sterols and retinol by argentation TLC 283
Vitamin D_2
GLC, in infant formulas and feeding preparations 188
Quantitative analysis by high-speed liquid chromatography 119
Tetracyanoethylene adduct, structure 61
Ultraviolet-irradiated products of ergosterol, determination by GLC 428
Vitamin D_3
Cod-liver oil, chemical determination 362
GLC, in infant formulas and feeding preparations 188
Nanogram quantities, measurement 426
Quantitative analysis by high-speed liquid chromatography 119
Vitamin E
Colorimetric determination in food 375
GLC, in food 375
Quantitative analysis by high-speed liquid chromatography 119
Vitamin E acetate: Quantitative analysis by high-speed liquid chromatography 119
Vitamin E succinate: Quantitative analysis by high-speed liquid chromatography 119
Vitamin K
Quantitative analysis by high-speed liquid chromatography 119
Synthesis 116
Vitamin K_1
Chromatographic analysis, application to infant formula products 279
Phosphorescence spectra and lifetimes 431
Vitamin K_3
Phosphorescence spectra and lifetimes 431
Wax esters: Isoamyl and isovalerate, chromatographic analysis 291
Waxes: Cutin monomers, determination of structure by a novel depolymerization procedure and combined GLC and mass spectrometry 71
Xanthophyll: Determination in dried plant materials 277

AUTHOR INDEX Volume 14, Number 6

Alfin-Slater, R. B.	688
Allen, C. E.	605
Angel, A.	647
Antunes-Rodrigues, J.	672
Bhatia, I. S.	695
Boardman, N. K.	664
Brindis, R. G.	688
Cushman, S. W.	632
Desai, K. S.	647
Evans, J. E.	611
Heindel, J. J.	632
Homcy, C. J.	678
Hood, R. L.	605
Hulcher, F. H.	625
Jeanrenaud, B.	632
Kaur, C.	695
Lee, D. J.	643
Li, K. C.	647
Margolis, S.	678
Martin, C. M.	618
McCluer, R. H.	611
Migliorini, R. H.	672
Montgomery, M. W.	643
Nicholas, H. J.	618
Ohashi, M.	698
Oleson, W. H.	625
Panter, R. A.	664
Petersen, B. J.	688
Raheja, R. K.	695
Singh, A.	695
Subbiah, M. T. R.	692
Sun, G. Y.	656
Taylor, S. L.	643
Teixeira, V. L.	672
Thompson, J. H.	688
Yamakawa, T.	698

U. S. POSTAL SERVICE

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION
(Act of August 12, 1970: Section 3685, Title 39, United States Code)

SEE INSTRUCTIONS ON PAGE 2 (REVERSE)

1. TITLE OF PUBLICATION: JOURNAL OF LIPID RESEARCH
2. DATE OF FILING: September 28, 1973
3. FREQUENCY OF ISSUE: Bi-Monthly
4. LOCATION OF KNOWN OFFICE OF PUBLICATION *(Street, city, county, state, ZIP code) (Not printers)*: Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, Mont. Cty, Md. 20014
5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*: 9650 Rockville Pike, Montgomery County, Bethesda, Maryland 20014
6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR

PUBLISHER *(Name and address)*: Lipid Research, Inc., Albert Einstein College of Medicine, Bronx, New York 10461

EDITOR *(Name and address)*: Richard J. Havel, University of California Medical Ctr., San Francisco, Calif. 94122

MANAGER EDITOR *(Name and address)*: Lewis I. Gidez, Albert Einstein College of Medicine, Bronx, New York 10461

7. OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)*

NAME	ADDRESS
Lipid Research, Inc.	c/o Albert Einstein College of Medicine Bronx, New York 10461

8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES *(If there are none, so state)*

NAME	ADDRESS
NONE	

9. FOR OPTIONAL COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES (Section 132.121, Postal Service Manual)

39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."

In accordance with the provisions of this statute, I hereby request permission to mail the publication named in item 1 at the reduced postage rates presently authorized by 39 U. S. C. 3626.

(Signature and title of editor, publisher, business manager, or owner)

10. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 132.122, Postal Manual) *(Check one)*

The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: ☒ Have not changed during preceding 12 months ☐ Have changed during preceding 12 months *(If changed, publisher must submit explanation of change with this statement.)*

11. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NUMBER OF COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED *(Net Press Run)*	3,200	3,200
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	-	-
2. MAIL SUBSCRIPTIONS	2,483	2,610
C. TOTAL PAID CIRCULATION	2,417	2,544
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS 1. SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	66	66
2. COPIES DISTRIBUTED TO NEWS AGENTS, BUT NOT SOLD	-	-
E. TOTAL DISTRIBUTION *(Sum of C and D)*	2,483	2,610
F. OFFICE USE, LEFT-OVER, UNACCOUNTED, SPOILED AFTER PRINTING	717	590
G. TOTAL *(Sum of E & F—should equal net press run shown in A)*	3,200	3,200

I certify that the statements made by me above are correct and complete. ▶ *(Signature of editor, publisher, business manager, or owner)* John R. Rice, Business Manager